

# WATER QUALITY SAMPLING OVERVIEW OF CURRENT PRACTICES UNDER THE WDR PERMIT

Waste Discharge Requirement Order No. R4-2015-0032-A1  
WORKING GROUP MEETING #15

**Los Angeles County Flood Control District**  
**JUNE 16, 2016**



# LACFCD CURRENT MAINTENANCE PRACTICES SOFT-BOTTOM CHANNELS

## Maintenance Schedule:

- a. Typically outside of the nesting season
- b. Typically during dry weather conditions
- c. SBC reaches with no sensitive species: maintenance typically scheduled between September 1 and March 15
- d. SBC reaches with potential or has endangered and/or threatened species: maintenance scheduled between September 15 and March 15, or after qualified biologist finds negative results
- e. If work requires extending through the nesting season, qualified biologists conduct nesting bird surveys

# LACFCD CURRENT MAINTENANCE PRACTICES SOFT-BOTTOM CHANNELS

Potential Sources of Water within the channel

a. Storm flows

b. Nuisance flows from upstream and adjacent residential and/or commercial properties, including landscape watering, golf courses

c. Water releases from adjacent or upstream sanitation and/or water districts

d. Natural spring wells or groundwater within the channel reach

e. Ponded water

# LACFCD CURRENT MAINTENANCE PRACTICES SOFT-BOTTOM CHANNELS

## Duration of Maintenance Activities

a. Short SBC Reaches:

1 – 2 days (about 80% of the reaches)

b. Longer SBC Reaches:

2 -3 weeks, weather permitting  
(i.e. Compton Creek)

# Water Quality Monitoring and BMP Effectiveness

## Per Condition 22 of the WDR

The objectives of Water Quality (WQ) monitoring for watersheds analyzed under the FS are to:

- Ensure WQ is not impacted as a result of the proposed maintenance activities or surface water diversion; and
- Assess BMP effectiveness
- Implement BMPs to ensure compliance with WQ standards

# LACFCD CURRENT MAINTENANCE PRACTICES SOFT-BOTTOM CHANNELS

## Conduct Water Quality Sampling

- a. Surface water needs to be diverted from work area.
- b. When surface water is flowing upstream and downstream of the channel reach
- c. Work is performed within the natural low flow of the channel that has water.

# LACFCD CURRENT MAINTENANCE PRACTICES SOFT-BOTTOM CHANNELS

## Water Quality Monitoring Is Not Required

- a. Channel is completely dry.
- b. No water diversion is needed.
- c. Work is performed outside of the water, including outside of the natural low flow channel
- d. No inflow from u/s of the channel but with outflow d/s of the maintenance reach due to nuisance flows from side drains.
- e. Inflow from upstream but no outflow downstream of the maintenance reach (i.e., water dries up before reaching the d/s end)

# **Water Quality Monitoring and BMP Effectiveness**

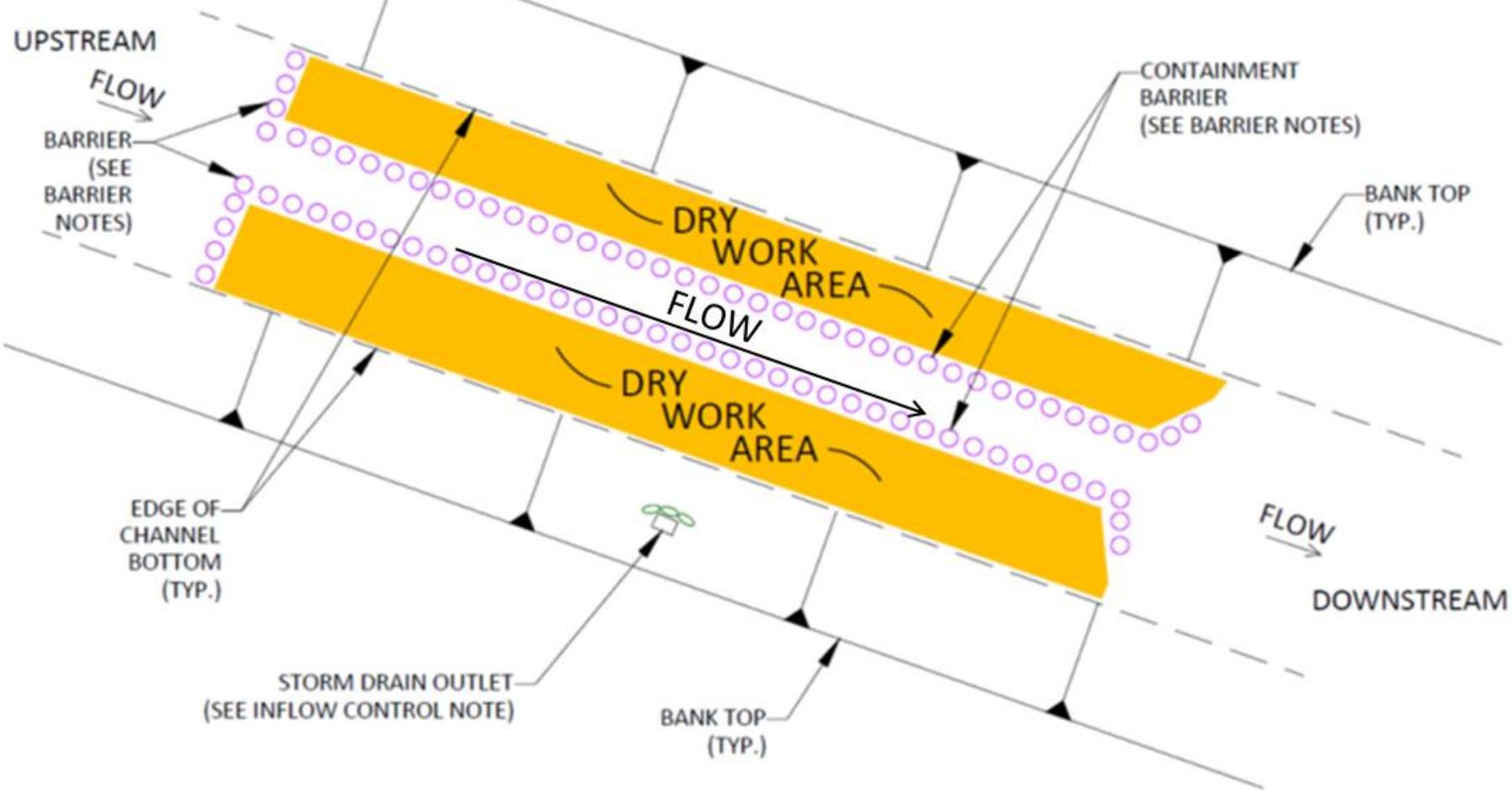
**WQ testing within each reach are performed**

- before, after, and during maintenance clearing activities.

**Three sampling locations are setup and samples are collected at:**

- Upstream of work area
- Within the work area
- Downstream of work area

LONGITUDINAL BARRIER(S) WITH PARTIAL CHANNEL ISOLATION  
OPEN-CHANNEL BYPASS CONVEYANCE WITHIN EXISTING CHANNEL  
CONCRETE-LINED CHANNEL



PLAN VIEW  
NO SCALE

# Water Quality Monitoring and BMP Effectiveness

## ○ WQ Sampling are conducted:

- Once within seven days prior to start of work, with no BMPs downstream. This is the baseline condition, to determine the variability of the channel in its natural condition.
- Daily during the first week of maintenance activities
- Once per week following the first week of maintenance activities (if applicable)
- Once within seven days after project completion with no BMPs downstream.
- After a storm event, a new baseline sampling is conducted to determine the channel's new natural condition

# Water Quality Monitoring and BMP Effectiveness

## WDR - WQ Testing Required Parameters

- pH – field test
- Temperature - field
- Dissolved Oxygen (DO) – field test
- Turbidity – field test; and
- Total Suspended Solids (TSS) – laboratory test

Analyses must be performed using approved US EPA methods .

# Water Quality Monitoring and BMP Effectiveness

- Downstream TSS is to be maintained at ambient levels
- When natural turbidity upstream:
  - is between 0-50 Nephelometric Turbidity Units (NTU), increases downstream shall not exceed 20%
  - is greater than 50 NTU, increases downstream shall not exceed 10%
- If results are elevated, work is stopped, crew cleans, replace damaged, and/or add more BMPs.
- Additional WQ sampling is taken until results meet the requirements above.

# Results of WQ Monitoring

## Malibu Creek & Dominguez Channel Watersheds FS

- FS WQ monitoring was conducted for 2014-2015 and 2015-2016 maintenance activities.
- SBC Reaches monitored for WQ as part of FS:
  - 2014-15: Reaches 26, 34, 35, 37, 38
  - 2015-16, Reaches 26, 33, and 38
- Except for Reach 26, all reaches monitored for WQ monitoring are located in the Malibu Cyn watershed.

# Water Quality Monitoring and BMP Effectiveness

- For many reaches, WQ baseline results showed higher turbidity and TSS levels downstream, in comparison with upstream measurements even before we conducted our maintenance activities.
- During maintenance activities:
  - Additional BMPs were placed downstream of work area to account for the high natural variability of the channel.
  - BMPs effectively improved the baseline water quality downstream.
- Communication/teamwork between WQ monitors and our field staff were also effective at ensuring all WQ results were relayed to field crews to modify and/or add BMPs.

# Los Angeles River Watershed FS– Water Quality Data

## General Observations

September to November 2011

### Comparison of Downstream WQ to Upstream WQ

Reach Number	Number of days of Sampling	Parameters Levels	Notes
1	1	T and TSS elevated	No water surface diversion. BMPs used to address T. Hand-clearing only.
2	7	T elevated.	No water surface diversion. BMPs used to address T. Hand-clearing only.
5	6	No exceedances.	No water surface diversion. BMPs used to address T. Hand-clearing only.
6	3	No exceedances.	No water surface diversion. BMPs used to address T. Hand-clearing only.
8	4	T and TSS elevated.	No water surface diversion. BMPs used to address T. Hand-clearing only.
14	1	T elevated.	No water surface diversion. BMPs used to address T. Hand-clearing only.
15	6	T and TSS elevated DO lower.	No water surface diversion. BMPs used to address T. Mechanical and hand-clearing used. Personnel notified of exceedances.
24	8	DO lower.	No water surface diversion. BMPs used to address T. Mechanical and hand-clearing used.
25	12	T elevated. DO lower.	No water surface diversion. BMPs used to address T. Mechanical and hand-clearing used.
99	2	No exceedances.	No water surface diversion. BMPs used to address T. Hand-clearing only.
100	2	T and TSS elevated.	No water surface diversion. BMPs used to address T. Hand-clearing only.

# WQ SAMPLING POINTS AND BMPs



Medea Creek Reach 33 – Photo 3B: Final downstream sampling point (#3A) on December 2, 2015 showing installation of additional BMP along with realignment of original BMPs to reduce turbidity at sampling point.

# Examples of BMPs



# Photos of Different Devices for Water Quality Testing



**Turbidimeter**

# Photos of Different Devices for Water Quality Testing



**pH Meter**



**Digital Water  
Test Meter**